REMARKS

Applicants have amended the claims to more particularly define the invention taking into consideration the outstanding Official Action. Applicants have amended claim 1 to better define the invention (see Fig 1a for support) and the discussion on pages 6, 7 and 8 of the specification. Moreover, it is a result of the structure and placement of the elements as defined in the claims which results in the mixing. Applicants submit that all of the claims now present in the application are in full compliance with 35 USC 112 and supported by the specification as originally filed and no new matter is introduced.

The rejection of claims 1-8 under 35 U.S.C. 103(a) as being unpatentable over Halldorson et al. in view of Knieper has been carefully considered but is most respectfully traversed in view of the following comments.

Applicants wish to direct the Examiner's attention to the basic requirements of a prima facie case of obviousness. To establish a prima facie case of obviousness, three basic criteria first must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations as provided for by KSR.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Note also that all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. In re Fine, 837 F.2d 1071, 5

USPQ2d 1596 (Fed. Cir. 1988).

Applicants also most respectfully direct the Examiner's attention to MPEP § 2145 wherein it is stated that Office personnel should consider all rebuttal argument and evidence presented by applicant and the citation of In re Soni for error in not considering evidence presented in the specification.

Applicants most respectfully submit that after careful review of the Halldorson reference, it teaches away from the presently claimed invention. Halldorson discloses a two-stage system, the first stage is the oxidation reservoir 14, the second stage is the electrocoagulation reactor 190, and a pressure discontinuity means 28, 194 between the two stages to induce hydrodynamic cavitation in Fig. 23. Halldorson teaches "a sufficient residence time in reservoir 14" (col. 7, line 35) and an oxidizing agent (col. 7, lines 1-10) being introduced to the reservoir 14 to oxidize the contaminants.

The above-mentioned Halldorson's disclosure clearly suggests to one of ordinarily skilled in the art that one cannot conceive the reactor defined in claim 1 of the present application, because 1) the reservoir 14 has to be large enough to have a residence time long enough to oxidizing the contaminants; 2) the pressure discontinuity is to induce hydrodynamic cavitation and to create flocking of the oxidized compounds, so that the flocculated phase is distinct from the aqueous phase (col. 7, lines 36-41), consequently air is not suggested to introduced into the oxidized water exiting from the reservoir to destroy the phase separation, and a mixing device is not suggested to be disposed in the bottom of the reactor to destroy the phase separation; and 3) the pressure discontinuity means between the two stages is a must to induce hydrodynamic cavitation.

The cited Knieper reference does not disclose "an air input for introducing air or oxygen-containing gas into the bottom of the tank", instead the element 18 shown in Figs. 4 and 23 of Knieper is for adding an oxidizing agent. The mixing device, i.e. the plates 84 in Fig. 21, of Knieper is disposed inside the reactor tank, instead of "disposed in the bottom of the tank". With these differences, the reactor defined in the newly amended claim 1 of the present application will have advantages that the

electrocoagulation undergoes in the reactor tank without the disturbance of the mixing device, and undesired corrosion in the pipes caused by the oxidizing agent. Accordingly, it is most respectfully requested that this rejection be withdrawn.

In view of the above comments and further amendments to claims, favorable reconsideration and allowance of all the claims now present in the application are most respectfully requested.

Respectfully submitted,
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